

BONE HEALTH FOR LIFE

Health Information Basics for You and Your Family



National Institute of
Arthritis and Musculoskeletal
and Skin Diseases

For your information

This publication contains information about medications used to treat the health condition discussed here. When this publication was printed, we included the most up-to-date (accurate) information available. Occasionally, new information on medication is released.

For updates and for any questions about any medications you are taking, please contact the U.S. Food and Drug Administration toll free at 888-INFO-FDA (888-463-6332) or visit its website at <https://www.fda.gov>. For additional information on specific medications, visit Drugs@FDA at <https://www.accessdata.fda.gov/scripts/cder/daf>. Drugs@FDA is a searchable catalog of FDA-approved drug products.

For updates and questions about statistics, please contact the Centers for Disease Control and Prevention's National Center for Health Statistics toll free at 800-232-4636 or visit its website at <https://www.cdc.gov/nchs>.

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National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Information Clearinghouse

National Institutes of Health
1 AMS Circle
Bethesda, MD 20892-3675

You can find this publication on the NIAMS website at
<https://www.niams.nih.gov>.

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Why does bone health matter?

Our bones support us and allow us to move. They protect our brain, heart, and other organs from injury. Our bones also store minerals such as calcium and phosphorous, which help keep our bones strong, and release them into the body when we need them for other uses.

There are many things we can do to keep our bones healthy and strong. Eating foods rich in calcium and vitamin D, getting plenty of exercise, and having good health habits help keep our bones healthy.

But if we don't eat right and don't get enough of the right kinds of exercise, our bones can become weak and even break. Broken bones (called fractures) can be painful and sometimes need surgery to heal. They can also cause long-lasting health problems.

But the good news is that it is never too late to take care of your bones.



What is osteoporosis?

There are many kinds of bone diseases. The most common one is osteoporosis (AH-stee-oh-por-OH-sis). With osteoporosis, our bones become weak and are more likely to break. People with osteoporosis most often break bones in the wrist, spine, and hip.

Our bones are alive. Every day, our body breaks down old bone and puts new bone in its place. As we get older, our bones break down more bone than they put back. It is normal to lose some bone as we age. But, if we do not take steps to keep our bones healthy, we can lose too much bone and get osteoporosis.

Many people have weak bones and don't even know it. That's because bone loss often happens over a long period of time and doesn't hurt. For many people, a broken bone is the first sign that they have osteoporosis.





Who gets osteoporosis?

There are many things that can increase your chances of getting osteoporosis. These things are called “risk factors.” Some risk factors are things you can control, and some things are outside of your control.

Risk factors you can control:

- **Diet.** Getting too little calcium can increase your chances of getting osteoporosis. Not getting enough vitamin D can also increase your risk for the disease. Vitamin D is important because it helps the body use the calcium in your diet.
- **Physical activity.** Not exercising and not being active for long periods of time can increase your chances of getting osteoporosis. Like muscles, bones become stronger – and stay stronger – with regular exercise.
- **Body weight.** Being too thin makes you more likely to get osteoporosis.

- **Smoking.** Smoking cigarettes can keep your body from using the calcium in your diet. Also, women who smoke go through menopause earlier than those who don't smoke. These things can increase your risk for osteoporosis.
- **Alcohol.** People who drink a lot are more likely to get osteoporosis.
- **Medicines.** Certain medicines can cause bone loss. These include a type of medicine called glucocorticoids (gloo-ko-KOR-ti-koids). Glucocorticoids are given to people who have arthritis, asthma, and many other diseases. Some other medicines that prevent seizures and that treat endometriosis (en-do-me-tree-O-sis), a disease of the uterus, and cancer can cause bone loss, too.

Risk factors you cannot control:

- **Age.** Your chances of getting osteoporosis increase as you get older.
- **Gender.** You have a greater chance of getting osteoporosis if you are a woman. Women have smaller bones than men and lose bone faster than men do because of hormone changes that happen after menopause.
- **Ethnicity.** White women and Asian women are most likely to get osteoporosis. Hispanic women and African American women are also at risk, but less so.
- **Family history.** Having a close family member who has osteoporosis or has broken a bone may also increase your risk.

Am I really at risk?

Because more women get osteoporosis than men, many men think they are not at risk for the disease. Many Hispanic and African American women are not concerned about their bones either. They believe that osteoporosis is only a problem for white women. However, it is a real risk for older men and women from all backgrounds.

Also, people from certain ethnic backgrounds may be more likely to have other health problems that increase their risk for bone loss. If you have one of the following health problems, talk to your doctor about your bone health:

- Alcoholism.
- Anorexia nervosa.
- Asthma/allergies.
- Cancer.
- Cushing's disease.
- Diabetes.
- Hyperparathyroidism.
- Hyperthyroidism.
- Inflammatory bowel disease.
- Lactose intolerance.
- Liver or kidney disease.
- Lung disease.
- Lupus.
- Multiple sclerosis.
- Rheumatoid arthritis.



Sources of calcium

- Tofu (calcium fortified).
- Soy milk (calcium fortified).
- Green leafy vegetables (e.g., broccoli, Brussels sprouts, mustard greens, kale).
- Chinese cabbage or bok choy.
- Beans/legumes.
- Tortillas.
- Sardines/salmon with edible bones.
- Shrimp.
- Orange juice (calcium fortified).
- Pizza.
- Bread.
- Nuts/almonds.
- Dairy products (e.g., milk, cheese, yogurt).

How do I know if I have osteoporosis?

Since osteoporosis does not have any symptoms until a bone breaks, it is important to talk to your doctor about your bone health. If your doctor feels that you are at risk for osteoporosis, he or she may order a bone density test. A bone density test measures how strong – or dense – your bones are and whether you have osteoporosis. It can also tell you what your chances are of breaking a bone. Bone density tests are quick, safe, and painless.

What can I do to make my bones healthier?

It is never too early or too late to take care of your bones. The following steps can help you improve your bone health:

- **Eat a well-balanced diet rich in calcium and vitamin D.**

Good sources of calcium include low-fat dairy products, and foods and drinks with added calcium. Good sources of vitamin D include egg yolks, saltwater fish, liver, and milk with vitamin D. Some people may need to take nutritional supplements to get enough calcium and vitamin D. The chart on page 8 shows how much calcium and vitamin D you need each day. Fruits and vegetables also contribute other nutrients that are important for bone health.

Recommended calcium and vitamin D intakes

Life-stage group	Calcium (mg/day)	Vitamin D (IU/day)
Infants 0 to 6 months	200	400
Infants 6 to 12 months	260	400
1 to 3 years old	700	600
4 to 8 years old	1,000	600
9 to 13 years old	1,300	600
14 to 18 years old	1,300	600
19 to 30 years old	1,000	600
31 to 50 years old	1,000	600
51- to 70-year-old males	1,000	600
51- to 70-year-old females	1,200	600
>70 years old	1,200	800
14 to 18 years old, pregnant/lactating	1,300	600
19 to 50 years old, pregnant/lactating	1,000	600

Definitions: mg = milligrams; IU = International Units

Source: Food and Nutrition Board, Institute of Medicine, National Academy of Sciences, 2010.



- **Get plenty of physical activity.** Like muscles, bones become stronger with exercise. The best exercises for healthy bones are strength-building and weight-bearing, like walking, climbing stairs, lifting weights, and dancing. Try to get 30 minutes of exercise each day.
- **Live a healthy lifestyle.** Don't smoke, and, if you choose to drink alcohol, don't drink too much.

- **Talk to your doctor about your bone health.** Go over your risk factors with your doctor and ask if you should get medicine to help prevent bone loss and reduce your chances of breaking a bone.
- **Prevent falls.** Falling down can cause a bone to break, especially in someone with osteoporosis. But most falls can be prevented. Check your home for dangers like loose rugs and poor lighting. Have your vision checked regularly. Increase your balance and strength by walking every day and taking classes like Tai Chi, yoga, or dancing.





Will I need to take medicine for my bones?

There are medicines to help prevent and treat osteoporosis. Some medicines work by slowing bone loss. Others work by building new bone. Your doctor may want you to take medicine if your bone density test shows that your bones are weak and that you have a good chance of breaking a bone in the future. Your doctor is more likely to order medicine if you have other health concerns that increase your risk for breaking a bone, such as a tendency to fall or a low body weight.



How can I join a research study?

The National Institutes of Health (NIH) conducts research studies all over the country in which people take part as volunteers. These studies help uncover new risk factors and treatments for osteoporosis and other diseases.

There are many benefits to being part of a research study, such as getting related medical care at no charge and, in some cases, help with travel and other costs. Also, study volunteers are seen by a team of experts and are often among the first to receive new treatments ahead of the general public. Many volunteers take part in the research simply because they want to help others with the same disease, both today and in the future.

More information on research is available from the following websites:

- **NIH Clinical Research Trials and You** was designed to help people learn more about clinical trials, why they matter, and how to participate. Visitors to the website will find information about the basics of participating in a clinical trial, first-hand stories from clinical trial volunteers, explanations from researchers, and links on how to search for a trial or enroll in a research-matching program.

Website: <https://www.nih.gov/health-information/nih-clinical-research-trials-you>

- **ClinicalTrials.gov** offers up-to-date information for locating federally and privately supported clinical trials for a wide range of diseases and conditions.

Website: <https://www.clinicaltrials.gov>

- **NIH RePORTER** is an electronic tool that allows users to search a repository of both intramural and extramural NIH-funded research projects from the past 25 years and access publications (since 1985) and patents resulting from NIH funding.

Website: <https://projectreporter.nih.gov>

- **PubMed** is a free service of the U.S. National Library of Medicine that lets you search millions of journal citations and abstracts in the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and preclinical sciences.

Website: <https://www.ncbi.nlm.nih.gov/pubmed>

Where can I find more information about bone health?

For more information on osteoporosis and bone health, contact any of the following organizations:

NIH Osteoporosis and Related Bone Diseases

National Resource Center

2 AMS Circle

Bethesda, MD 20892-3676

Phone: 202-223-0344

Toll free: 800-624-2663

TTY: 202-466-4315

Fax: 202-293-2356

Email: NIHBoneInfo@mail.nih.gov

Website: <https://www.bones.nih.gov>

If you need more information about available resources in your language or another language, please visit our website or contact the NIAMS Information Clearinghouse.

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Information Clearinghouse

National Institutes of Health

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Bethesda, MD 20892-3675

Phone: 301-495-4484

Toll free: 877-22-NIAMS (226-4267)

TTY: 301-565-2966

Fax: 301-718-6366

Email: NIAMSinfo@mail.nih.gov

Website: <https://www.niams.nih.gov>

Other resource

National Osteoporosis Foundation

Website: <https://www.nof.org>

Do you have osteoporosis or a related condition?

You may be able to help scientists
learn more about these conditions.

For information about research projects
across the country, call:

NIAMS

Toll free: 877-22-NIAMS (226-4267)

Email: NIAMSinfo@mail.nih.gov

You could make a difference!

The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), a part of the U.S. Department of Health and Human Services' National Institutes of Health (NIH), is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases; the training of basic and clinical scientists to carry out this research; and the dissemination of information on research progress in these diseases. The NIAMS Information Clearinghouse is a public service sponsored by the NIAMS that provides health information and information sources. Additional information can be found on the NIAMS website at **<https://www.niams.nih.gov>**.



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